SYSTEM AND METHOD FOR INTERACTIVE, COMPUTER-ASSISTED ON-LINE AUCTIONS

PRIORITY NOTICE

This Non-Provisional U.S. Patent Application claims the benefit of the July 30, 1999 filing date of Provisional U.S. Patent Application Serial Number 60/146,702.

COPYRIGHT NOTICE

BACKGROUND OF THE INVENTION

The present invention relates to novel methods and apparatus for conducting, presenting, monitoring, and tracking auctions on-line, for pure Internet auctions, and real-time presentation of physical auctions. The methods and apparatus disclosed in this application can also be use in all on-line object and catalogue presentations and other E-commerce sales and advertising channels and mechanisms.

Description of Related Art

Traditional physical auctions of goods and services take place as events with defined time periods, at defined and limited physical locations where the buyers, on-lookers, commissioned sellers, sellers, trained auctioneers, and the goods gather. In some instances, with pre-arranged facility, remote buyers can be linked at real-time to the auction, via private or public radio, television, or telephone network, and call-in bids remotely over telephone connections. The real-time broadcast or narrowcast of an auction through radio, television, or telephone networks can be costly, and access is usually limited to specific locations/rooms with the relays or connections Therefore, the conventional physical auction events are considered restricted to a limited buyer audience who can either physically attend the auction at location, during that specific time frame, or be present at a remotely linked facility also at that specific time frame. The costly, time specific physical gathering of a "live" auction event is only worthwhile or feasible for both the auctioneer's and the buyers' sides, if, and only if there is a large number of items to be sold. However, only one item can be "auctioned" at a time, in a physical live auction event. Thus, each item has a very limited time allotment to be on the auction stage.

Some items stimulate more interest than others in an unpredictable way in a time limited physical live auction event. The buyers come to, and leave the event also in somewhat of unpredictable ways, it is difficult for a live auction event to publish and commit to a fixed item-by-item schedule in a catalogue

ahead of the event. Therefore, buyers do not know what item would be auctioned at what time frame, and what items would be auctioned next even while at the auction. Buyers do travel to the location; frequently to miss the items most interested, unless he or she is willing to arrive on-time, and commit to sit through the entire auction event without breaks. Wealthy collectors or dealers often go through the preview, note the interested items manually, and give instructions as to the highest price they would be willing to pay for each item to hired professional buyers/bidders to attend the event and do the bidding. The process is manual, labor intensive, and somewhat risky for both the hiring collectors and their hired buyers.

The new Internet "cyber" Auction format, on the other hand, allows buyers, sellers, and spectators to browse and search for information, descriptions, and auction status of goods, and submit bids without geographical or strict time limitations. All items, independently, can be "auctioned" during the same time period, in parallel, and simultaneously. The duration for each "item" in "open auction" is largely defined by the owner of the item or his agent, and independent of other items. The duration is measured in days or weeks, rather than the minutes as custom and necessary in a physical live auction. The beginning and ending times of "open auctions" are published individually in each item's entry. Data entry is left to the owners of objects with templates provided by the sites. The sites has no organized data on what objects may become available for auction, and do not publish up-coming auctions.

At *Ebay.Com* (Figure 1, July 15,1999), the largest Internet auction site, millions of objects are "auctioned" at any given time. Search for goods is accomplished through browsing the extensive category trees/paths (Figures 1A, and 1B), or enter item type or name through a "search" function. The auction item list obtained through category browsing are astoundingly large, in the order of hundreds to thousands of items, over many tens of web-pages (each can be more than one physically printed page), listed with abbreviated one-line entry or a thumbnail entry for each item. Figure 1C1 through Figure 1C6 list "Featured" furniture auction items, and Figure 1C7 is the 1st page of 37 pages of 1761 furniture items currently being auctioned on the *Ebay.Com* site on July 15, 1999. Note that the right most column indicates the "ending time" of the auctions, mostly ending around July 22 through July 25, a ten day auction time span, impossible to accommodate in conventional "live" auctions, which measure auction time for each item in minutes. Choosing items out of such a large list can only be accomplished by reading through tens or hundreds of one-line abbreviated descriptions of each item, and choosing one item from the list to view the more detailed information about the item, one-at-a-time. Once an item is thus chosen, the browser/buyer clicks on the line or thumbnail entry of the item on the list (see Figure 1C2, 5th item on the page), and wait for its descriptions to be sent to the screen from the remote site server (Figures 1D1 through 1D 3.) If the buyer wishes to view more items from the list of hundreds of items, it can only be done, again, one-at-a-time, by clicking "back" to the list,

and choose another item, click on the item, wait for page download, thus repeating. When the buyer is viewing information about one interested item, the information for other items previously viewed are gone from the screen. The buyer must print all information of every item, before clicking "back" to the list to access information of another item. The comparison between similar or interested items can only be reasonably done by reading the volume of printout pages of these items. At the mean time, the auction status and current high-bid of some items may have already changed. Although such process is tedious and time consuming, for many people, it is still preferred over making the effort required to attend a conventional physical "live" auction.

Bidding is entered electronically on a bidding screen that usually follows the bidding information, object description, and photograph(s) of the object. For a single item auction, the bid entered at any given time must "beat" the current highest bid to be relevant and logged into bidding history as the updated highest bid. For a "Dutch Auction," where multiple numbers of an identical item are auctioned, the bid must be higher than the current lowest valid bid. Every "current highest bid" is there to be outbid before the "auction time" is still open. It is highly desirable to a serious buyer to monitor the bidding status, and bid only when "closing" time comes near.

With the current state of the art in online auction, such monitoring is accomplished through manually logging onto the site at any particular time, go to the pages where a particular item of interest is described, look up the bidding

status of that particular item, and the closing time of this particular auction. Set an alarm clock for certain intervals before its "closing time," for final check, which could be days later. At any moment between the time you last manually checked the auction status, and the time of the alarm, the auction status can only be updated by manually and periodically log on to the site, go to the particular pages describing the item, one item at a time. If the buyer is interested in a number of items, the process is extremely tedious, time consuming, and unreliable. One can enter a bid, request email notification from the site when the bid is "outbid" by another buyer. However, this is a one-time only notification. To be notified again, one must enter another bid that beats the current highest bid, and risking buying the object at that price, or to be outbid again.

For a physical live auction event, there is no way to monitor other than being physically present.

Figures 2 are screen prints of *Auction.Yahoo.Com,* and Figures 3 are screen prints of *AmazonAuction.Com,* illustrating the two sites' identical formats to *Ebay.Com*. This universal Internet Auction Format is used with very minor variations on the theme in all state-of-the-art auction sites. Basically, the home pages of the auction sites contain a primary category listing, a "featured" listing, a "search" entry box, and some informational/promotional icons, textual descriptions, and links. Clicking on a category title on the primary category list brings the next page containing the listing of the next level of categories under that particular category, and a list of the "featured" items in that category.

Clicking on one "featured" title brings information about that one particular "featured" item. Similarly, clicking on brief descriptions of promotional or informational entries and icons brings more detailed information about the entry. Clicking on a subcategory brings the listing of the next level subcategories and the "featured" items in that subcategory, until the particular category path is exhausted. Then, all items under that end category is listed over many web pages, accessible one web-page at a time, each containing more than one physical print page. Links to information of Items listed on a web page are accessible also one-item-at a time. Entering a search word or a search phrase brings a list of items that contain the word or phrase in the tagging header or in the description.

Although facilitated to provide simultaneous auctions, Internet format of the known-art does not allow viewing, monitoring, or tracking of simultaneous auctions of multiple items. As described previously, a buyer can elect to visit the "biding" screen, enter a bid for each interested item, and request to have electronic-mail (email) sent to his/her email account as a one-time notification when a bid is outbid. Or the buyer can periodically log-on to the auction site, and manually search and browse for status information of interested items, one at a time.

SUMMARY OF THE INVENTION

The present invention relates to novel methods and apparatus for conducting, presenting, monitoring, and tracking auctions on-line, for pure

Internet auctions, and for real-time internet presentation of live physical auctions. The "current" auction objects are presented in moving graphical arrays that can be sorted by columns or rows, commanded to moved to show items beyond the screen, or stopped to select individual items to obtain further information or to be monitored and tracked. The "up coming" objects that are soon to be "open" for bidding are shown on a separate strip on the screen. The strip "cycles" onto the screen to accommodate displaying more objects, than the screen size can accommodate. The moving strip can also be activated to step in the opposite direction, or stopped for detailed view, or selected for monitoring, tracking, or to obtain further information. The displaying and selection method and apparatus can also be used for other e-commerce sales channels and catalogs.

Selected objects from different categories, or even different sites can be monitored and tracked on the same screen.

Self-rotating, automated Virtual Reality is used to display three-dimensional objects. Split screen allows video broadcasting, narrow casting, or streaming of "live auction" events alongside detailed still or virtual reality images of auctioned objects, their descriptions, and the bidding entry form, as well as the running strip cataloguing the upcoming lots/items.

The methods and apparatus disclosed in this application can also be use in other types of on-line object and catalogue displays, and other E-commerce channels and services, in addition to the auction format.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1. *Ebay.Com.* Known-Art Auction Format. Only ONE link (one item)—can be clicked at any time on any page, as in all Internet web pages.

FIG. 1A shows the home page, with its 1st level categories listed on the left side of the page, the "featured" items listed in the middle of the page, and the "search" box at top center of the page.

FIG. 1B shows the next level categories under Antiques Category listed on the home page. The "featured" items are listed on the right side of the page.

FIGS. 1C to 1C9 is sent from the site server when the "Furniture" sub-category is clicked on Figure 1B.

FIGS. 1C1 to 1C6 are one-line descriptions of "featured" items in the Furniture category.

FIGS. 1C7 to 1C9 are the first of the 37 web-pages listings of 1,761 furniture items currently being auctioned on the site.

FIGS. 1D1 through 1D3 are detailed description and bidding status of the item listed on Figure 1C2, 6th item from the top: Super Turn of Century Oak Victorian Secretary.

FIG. 1E1 is the "Search" result for "bedroom furniture" in the Antiques category. There are only two items found.

FIG. 1E2 is the "Search" result for the same phrase "bedroom furniture in all categories, with 17 items found, including many Dollhouse bedroom sets.

FIG. 2: *Auction.Yahoo.Com.* Known-Art Auction Format.

FIG. 2A is the home page with the 1st level category listing.

FIG. 2B lists subcategories under "Antiques & Collectables." The page is sent from the site server when the "Antiques & Collectables" category on the home page 2A is clicked.

FIG. 2C lists subcategories under the "Furniture" category on 2B. The page is sent from the site-server when the "Furniture" category on 2B is clicked.

FIG. 2D: lists the 5 featured items on the top of the page, and a total of 16 items in the "Living Room Set" category. The page is sent from the site server, when the "Living Room Set" category on 2C is clicked.

FIG. 2E: shows the "Armoires" subcategory under the "Furniture" category listed on 2C. There are a total of 12 items. The 5 "featured" items are shown on the top of the page.

FIGS. 2F1 and 2F2: The "Chests" subcategory under the "Furniture" Category listed on 2C.

FIGS. 2G1 and 2G2: The description of an item listed on 2F1, the Oriental Hope Chest. Only one item can be clicked and reviewed at a time.

FIG. 3: The *Auctions.Amazon.Com.* Known-Art Auction Format.

FIG. 3A: is the home page, listing the 1st level categories on the left side, and 6 "featured" items in the middle of the page.

FIGS. 3B1 through 3B3: lists the second level categories under the "Antiques" category, and the "Featured Auctions" in the "Antiques" category.

FIGS. 3C1 to 3C5: lists the first 50 items out of a total of 464 items in the "Books & Manuscripts" category under the "Antiques" category. Information can only be gotten one item, one link at a time, as in all Internet sites.

FIG. 4: An example of an On-Line Auction presentation implemented with the current invention.

FIG. 4A. The" featured", and "search," or "category" browsing results are shown in a graphical array, with multiple-select capabilities. The "upcoming" auctions are announced in a cycling or stationary (scrolled to view) margin-strip at the right side. The "present" auctions are presented in rows

Each row of the array can advance to left, back to right, continually move (GO button) to show more items, or stop, at command by clicking on the commend buttons at the left margin of the row. The "upcoming" column on the right has similar functions. The movement for the column is up-down movement.

In this particular presentation example, we have chosen 3 categories and the "featured." The same method and apparatus can present items of the same category, or the subcategories within a category, for example, separating sports cars of different manufacturer.

FIG. 4B. The screen shot of the Auction home-page screen at some time later. Due to exercising the moving functions, some items have changed positions on the array, some items have left the screen, and some items not shown in 4A appear on the screen.

FIG. 4C: The selected items from 4A and 4B appear on a monitoring screen. The screen is automatically tracked/updated by synchronizing with the server data at user programmable intervals. Object that should be seen from all sides has an "On" button in a portion of its still image. Clicking the "ON" button turns on the Virtual Reality with automated rotation as well as mouse driven rotation features. The "ON" button can be replaced by "VR" or any other form that representing turning on "Virtual Reality." Detailed information for each monitored object can be called individually by clicking on the "Detail" button, or selectively and collectively by clicking the "select" boxes, and submitting requests to the server after completing the selection process. The object positioning in the array can be sorted with various criteria at user request or default setting. The "alert" can also be programmed, for example, to surround "End Time" box with small blinking stars, or any other attention causing signal, to signal the end of "open" auction within 30 minutes (or an hour), and blinking red stars for "My bid" button when "my bid" is out bid.

FIG. 4D: Selecting objects monitored in screen 4C for viewing detailed information and access bidding apparatus collectively, would bring this screen after submitting the selection. In this example, The Egli Ucelli landscape painting, the Jaguar S-series, and the Algarve rug are selected.

FIG. 5: An example of the "Live" Auction Format of the Present Invention.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to novel methods and apparatus for conducting, presenting, monitoring, and tracking auctions on-line, for pure Internet auctions, and for real-time linking to physical auctions. The "current" auction objects are presented in moving graphical arrays that can be sorted by rows or columns, and moved bi-directionally to show more items than the computer screen size can accommodate, or stopped to select individual items to obtain further information, or to be monitored and tracked. The "up coming" objects that are soon to be "open" for bidding are shown on a separate strip on the screen. The strip and the sorted rows or columns can be commanded to "cycle" onto the screen continually to display objects beyond the screen. The moving strip can also be activated to step in both directions, and stopped for detailed view or selection for monitoring, tracking, or to obtain further information. The displaying and selection method and apparatus can also be used for displaying catalogs and other e-commerce channels and services.

Selected objects from different categories, or even different sites can be monitored and tracked on the same screen.

Self-rotating, automated Virtual Reality is used to display three-dimensional objects. Split screen allows video broadcasting, narrow casting or streaming of "live auction" events, or fashion catwalk events alongside detailed images of auctioned objects, their descriptions, and the bidding entry form, as

well as the running strip cataloguing the upcoming lots/items for auction or catwalk.

The methods and apparatus disclosed in this application can also be use in other types of on-line object and catalogue displays and other E-commerce channels, mechanisms, and services in addition to the auction format.

The present invention presents objects presently open for auction in each category on a graphical array, with the "up coming auctions" running on a margin strip. A time stamp signifies the time the information is loaded to the computer at its latest synchronization/up-date. The array can be sorted by user specified or default criteria in columns or rows. Command buttons providing options allowing viewers to start, or stop the cycling, use the scroll button to scroll up or down, or left or right, to see more items. The bidder/viewer selects interested objects from the array of either the same category, or from different categories, or even from different sites, and/or the interested "upcoming" objects from the margin strip. The "auction wizard" of the current invention fetches the detailed information and enlarged graphics of the selected items from the site databases, and composes a personalized auction monitor screen for the bidder/viewer. The screen is automatically updated with new status, at user programmable intervals. If the bidder/viewer's computer is disconnected from the server, the synchronization occurs automatically upon reconnection.

Differentiated level of selections can be made, and the array presentation can be sorted by category, or with other criteria of differentiation. "Alert" is

programmed to user selectable criteria, such as closing time, outbid, etc.. Default setting can be provided, for example, to alert closing time in one hour or less, or outbid by others.

Dropping items from monitoring screen can also be programmed to criteria, such as highest bid going beyond a certain price, or successful final bid of another similar item, etc. Monitoring is automatically dropped when closing is over, and status sent to "closed auction report" folder.

Automated 3D Virtual Reality presentation is used to display three-dimensional objects, such as sculptures, cars, lamps, or furniture, revolving on the screen automatically. Buttons are provided to the VR presentation for viewer to elect using the mouse to rotate the object, or to resume the automated rotation. A "VR," button is provided on still images of three-dimensional objects for activating Virtual Reality presentation upon clicking.

"Split Screen" accommodates broadcasting, narrow casting, and streaming video for viewing the live auction events, alongside the web images, VR or 3D presentations of the object, detailed textual descriptions, and the online "bidding" mechanism, for linking "live auction" sessions to the on-line auction network.

An example of an On-Line Auction presentation implemented with the current invention is illustrated in FIG. 4. FIG. 4A. shows "search," or "category" browsing results, and the" featured" items in a graphical array, with multiple-select capabilities. The "upcoming" auctions are announced in a cycling or

stationary (scrolled to view) margin-strip at the right side. The "present" auctions are presented in rows, and sorted in rows according to category criteria. A set of command buttons are placed at the left margin of each row to enable each row of the array to advance to the left, or back to the right by pressing the mouse button on the arrows, or to continually move for showing more items beyond the screen by clicking on the "GO" button, or stop at command by clicking on the "STOP" button. The "Other" button allows the viewer to select to view items from other categorization. The "upcoming" column on the right has similar functions. The movement for the column is up-down movement instead of the left-right for the rows of "present auctions."

In this particular presentation example, we have chosen 3 categories and the "featured." items for the rows. Other criteria can be used, such as displaying subcategory items from the same category, for example, sports cars of different manufacturer, or displaying same category items sorting by ending time, etc.

Each item on the array is selectable. The viewer can select as many items from the array as desired for monitoring, for detailed information, or for bidding. When the selection process is completed, the viewer "submits" the selection by clicking the mouse button on the "Submit" button located at the bottom of the screen.

FIG. 4B shows the FIG. 4A screen at some later time. Due to exercising the moving functions, some items have changed positions on the array, some items have left the screen, and some items not shown in 4A appear on the screen.

FIG. 4C: Displays the viewer-selected items from 4A and 4B on a monitoring screen. The screen is automatically tracked/updated by synchronizing with the server data at user programmed or default intervals. Three-dimensional object that should be seen from all sides has an "On" button in a portion of its still image. Clicking the "ON" button turns on the Virtual Reality with automated rotation as well as mouse driven rotation features. The "ON" button can be replaced by "VR" or any other form that representing turning on "Virtual Reality." Detailed information for each monitored object can be called individually by clicking on the "Detailed" button, or selectively and collectively by clicking the "select" boxes, and submitting requests to the server after completing the selection process. The object positioning in the array can be sorted with various criteria at user request or default setting. The "alert" can also be programmed, for example, to surround "End Time" box with small blinking stars, or any other attention causing signal, to signal the end of "open" auction within 30 minutes (or an hour), and blinking red stars for "My bid" button when "my bid" is out bid.

Selecting objects monitored in screen 4C for viewing further detailed information and access-bidding apparatus collectively would bring the screen shown in Figure 4D after submitting the selection. In this example, The Egli Ucelli landscape painting, the Jaguar S-series, and the Algarve rug are selected. The Jaguar has Virtual Reality presentation, activated by clicking on the "ON" button. The column in the middle are textual descriptions for the items, and the

Auction bids column to the right is where the auction status is presented, updated, and where bids can be entered. The membership ID number only has to be entered once. The scroll bars indicates there is more information in the box than what is shown. When the cursor is moved into the frame, where only partial information is shown, the full frame would pop-up.

FIG. 5: Shows an example of the "Live" Auction Format of the Present Invention. The 2 boxes at left are real-time, live streaming, broadcasting, or narrowcasting of live scenes at the physical auctions. The upper portion of the second column from the left displays either still image of a 2-D object, or still image of a 3-D object, with Virtual Reality option upon clicking on the still image. The upper portion of the 3rd column includes bidding screen and description screen. The lower portion displays the next item to be auctioned, and the right column displays the upcoming objects after the next auction in their time order. Bringing the cursor onto an image, the brief description is shown in a floating box. Clicking on the image brings detailed descriptions.

The present invention is implemented using software which can be written in many programming languages, or implemented with many web-page generation tools. The present invention can be used on a global or local computer network, on a personal computer, on viewable storage media such as a CD ROM, on a wireless telephone, on a wireless personal assistant such as a Palm Pilot®, or on any type of wired or wireless device that enables digitally stored information to be viewed on a display device. Also, information displayed and viewed using

the present invention can be printed, stored to other storage medium, and electronically mailed to third parties.

Numerous modifications to and alternative embodiments of the present invention will be apparent to those skilled to the art in view of the foregoing description. Accordingly, this description is to be construed as illustrative only and is for the purpose of teaching those skilled in the art the best mode of carrying out the invention. Details of the structure may be varied substantially without departing from the spirit of the invention and the exclusive use of all modifications which come within the scope of the appended claims is reserved.